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ABSTRACT

This project sought to focus on elements of critical thinking and reflective judgement specific to the college classroom experience using the Reflective Judgment (RJ) Model developed by P. M. King and K. M. Strohm-Kitchener. The project included an exploration of college instructors' assumptions and beliefs about college students, and an invitation to college faculty to employ classroom strategies based on the RJ model. The RJ model describes a sequence of steps and stages that individuals employ in their response to ill-structured problems with answers becoming increasingly sophisticated with progression along the steps. In the final stages students see knowledge as a synthesis of perspectives with truth construed as a tentative judgement based on existing evidence. A qualitative study examined the epistemic orientations and assumptions about college students' reasoning of seven faculty members. It found that participants tended to underestimate the sophistication of personal epistemologies maintained by "typical" students in their programs. Chapter 1 contains an introductory essay on critical thinking and the project. Chapter 2 contains the faculty study, titled "Professors' Beliefs and Assumptions Regarding Reasoning Abilities of College Students" (by Geoffrey Scheurman). Chapter 3 contains descriptions of three faculty projects: "Teaching Ethics to Counselors Through Short Fiction and Essays" (Tom Russo); "Investigating and Analyzing Interest Groups" (Steven Leubke); and "Constructivist Strategies for Promoting Reflective Judgment in an Educational Psychology Course" (Geoffrey Scheurman). (Contains 27 references.) (JB)

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Thinking About Thinking: A Constructivist Approach to Critical Thinking in the College Curriculum

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ABSTRACT. This project took place during the academic year 1995-'96. The project is presented in three sections. First, a general overview of critical thinking and the Reflective Judgment model is considered. Second, faculty were interviewed and responded to inventories regarding their beliefs about critical thinking and about their perceptions of student reasoning abilities. These findings are reported in the Chapter Two by Scheurman and Green. Third, three separate classroom interventions are presented that involved both graduate and undergraduate students engaged in critical reasoning with respect to ill-structured problems. Here the Reflective Judgment of King and Kitchener (1995) was used as a practical, constructivist guideline for the improvement of classroom instruction.

Introduction. College faculty members almost universally agree that the retention of content from their respective disciplines is tyically short lived. This seems to be the case both in the minds of our students and in the histories of our areas of study and scholarship. Also, practically without exception, college instructors seek goals and student outcomes that go well beyond the retention of mere facts and figures. Whether the course is Calculus II or the History of Japan, college faculty tend to be deeply concerned about the intellectual climate of the experience.

A common thread among college faculty seems to be that we agree that students need to learn to think critically and to argue and persuade others as well as listen carefully to diverse points of view. This means that the task of the college instructor is to facilitate the intellectual growth of the student by establishing a classroom climate conducive to critical thought and reflection (Cameron, 1993). In turn, the skills of critical thinking are employed to address problems that are both complex and not easily resolved by quick recourse to the text and instructor as the final authority. Such problems are termed "ill-structured". It is also insufficient to adapt a purely relativistic stance saying that each of us has our own opinions and they are just that - opinions. Relativism, a "favorite" tactic of many college students, may leave us

without any viable direction for our inquiries about theory, research and application.

We want our students to think about, reflect upon, and most importantly, care about the ill-structured and often open-ended dilemmas that face every discipline in the curriculum. We want students to listen, read and weigh the evidence and come to thoughtful, imaginative yet tentative decisions. Such flexible decision-making can help orient us to future actions in our fields. After all, in our own professional and academic lives, it is just these sorts of problems and dilemmas that excited and inspired us to pursue our own particular areas of academic study. It is also these questions and concerns that helped shape us as thinkers. Also, in important ways they have contributed to our own personal and professional development.

Background. In recent years there has been a discernible shift in thinking and practice about teaching the skills of critical thinking in the college curriculum. This is reflected in the growing interest in strategies to facilitate critical thought and reflection skills among our students. Along with this emphasis, the teaching of critical thinking skills, as a discrete set of technical skills learned in an isolated fashion, has been criticized (Giroux, 1994). Instead, new instructional approaches to critical

thinking have been recently offered that focus on the entire experience of the college student, i.e., what students bring in the form of past experience to the classroom along with both in class and out of class experience as contributing to the development of critical thinking. Also, critical thinking abilities seem to be best fostered in a climate of interdisciplinary inquiry (Belenky, 1986).

Terenzini,et. al. (1993) have studied three domains of student experience including curricular exposure, direct classroom instruction and informal, out of class experiences. They found significant effects of out of class experiences with respect to having a positive influence on critical thinking. Also, their literature review reports that differences among major fields of study tend to be more a function of prior academic training and experience. It appears to be a difficult and unenlightening effort to attempt to isolate variables in a quest for their specific contribution to the development of critical thinking. Instead, there is increasing evidence that critical thinking is a dynamically constructed set of skills and attitudes derived from multiple experiences both past and current.

Factors within the classroom itself, other than direct instructional techniques, can also be instrumental in the development of critical thinking. Garcia and Pintrich (1992) studied "intrinsic goal orientation" and its

influence on critical thinking. The authors report a " . . . positive relationship between motivation, deep strategy use, and critical thinking" (p.16). Issues such as student curiosity, instructor enthusiasm and opportunities for cooperative classroom activities can all positively influence the degree of student engagement in activities. This,in turn, can lead to the development of critical thinking.

Finally, in addition to the complex and dynamic interplay of environmental factors, aspects of development and maturation play a crucial role in critical thinking. In the 1970's theoretical thought extended Piaget's concept of formal operational thinking to new adult conceptualizations of postformal thinking. This was initiated as theorists began to apply dialectical processes to adult thinking (Riegel, 1973). The concern here was to rethink adult reasoning processes and suggest that qualitative changes took place following the beginning of formal operational thinking. Riegel's task was to consider Piagetian thought and theory along with dialectical processes. But even more important to this discussion, Riegel suggested that in dialectical thinking adults were engaged in an interdependent relationship between form and content, subject and object and strategy and outcome.

The Perry scheme (1981), widely applied to the

development of ethical reasoning among college students, also moves beyond Piagetian formal operations to suggest qualitative stages of adult reasoning. Here, as in more dialectical processes, the college student moves from an appeal to authority to relativism to simultaneously weighing alternatives. But perhaps the most widely researched adult stage approach to college student thinking and reasoning processes is the Reflective Judgment (RJ) model (Mine,King,Hood & Wood, 1990; Strohm-Kitchener,Lynch,Fischer & Wood,1993 and King & Strohm-Kitchener, 1994). While it is not the purpose of this introduction to review the current research on this model, empirical research on the RJ model suggests sequentiality of stages, age levels and age differences.

In its most general form these critiques and the proposed reconceptualization of critical thinking (and therefore how to teach it to students) seems to reflect the current interest in constructivist approaches to learning and the college curriculum. Simply stated, the constructivist argument strongly suggests that learners bring with them to the classroom a potential wealth of prior experience, knowledge and attendent skills. This is equally true whether the course is in English literature or Chemistry. In addition, critical thinking and its development is related to more subjective, but no less

important, aspects of student learning and development. Motivation, self-efficacy beliefs and basic attitudes towards learning all contribute to the development of critical thinking skills (King, 1992).

This interrelationship of factors between the student's past experiences and values, current beliefs about oneself, and the subject matter itself, suggests that critical thought and reflection cannot be effectively thought of as a set of isolated skills. A more holistic, developmental and constructivist perspective needs to be employed in order to entertain multiple sources of influence and outcome. It is suggested that the newly emerging constructivist approach represents a very significant shift away from controlling the learning experience by reducing the need for preordained boundaries and categories. Constructivists argue that critical thinking is best developed in an intellectual atmosphere that values dialogue and discussion. In addition, a constructivist approach to the development of critical thinking attempts to engage students in the process of "learning how to learn". In this regard there is a shift in focus (and therefore changes in pedagogical strategy) from "teaching" critical thinking to "facilitating" the development of emerging critical thinking abilities in students.

The Reflective Judgment (RJ) Model. Given the considerations briefly described above, The Reflective Judgment model developed by King and Strohm-Kitchener (1994) best fits our project needs. This seemed to be the case for several reasons. First, reflective judgment is seen as a special kind of critical thinking; one that is inherently embedded in the instructor/student interactions that takes place in the classroom. Second, this model is clearly developmental in nature and scope, suggesting that adults move through discrete yet interrelated stages of reflective judgment. Third, when factors one and two are considered conjointly, the constructivist notion of the importance of the environment and context is considered alongside the developmental preparation and readiness of the student. And fourth, there is a comprehensive research basis available upon which to shape applications across disciplines and experiences.

Because this model has been thoroughly described in their recent book (King and Strohm-Kitchener, 1994), only a very brief summary will be offered here. The RJ model, having been researched over the past fifteen years, describes a sequence of steps and stages that individuals employ in their repsonse to ill-structured problems. As one moves up the stages the answers become increasingly

sophisticated. As a result more complex and ambiguous elements of the original problem can be considered.

There are a total of seven stages. The first two stages represent considerable limitations in addressing ill-structured problems. Here the individual is bound to concrete observations and the authority of others. The college student will look directly to the instructor and text and clearly expect a well defined answer settling the "matter" of the ill-structured problem once and for all. Stages Three and Four represent a shift away from the absolute desire for clarity and certainty. There is a recognition at these stages that all knowledge is incomplete. At Stage Four in this process, the student begins to look to less concrete, and therefore, more abstract principles to attempt to clarify problems.

In these earliest stages, students (typically college freshmen) exhibit a dualistic conception of reality in which authorities are responsible for rendering absolute truth. These students often move through stages in which knowledge is regarded as relative and multiple opinions are considered equally valid.

Stages Five and Six provide the depth and richness of background and context. Here the student seeks information, evidence and opinion to broaden the historical and current context of the proposed problem. This process is further

developed at Stage Seven where the student is engaged in a process of inquiry that balances competing and sometimes contradictory perspectives. This is done as a system of critical thinking that reviews and researches all possible aspects of the problem in an effort to achieve a tentative solution in the face of continued uncertainty. In these final stages students see knowledge as a synthesis of perspectives. Now truth is construed as a tentative judgment based on existing evidence.

Again, it is clear that dramatic progression along this path is not met in a single course, experience or single year of academic study. However, the RJ model along with other measures of epistemic dimensions suggest that students possess networks of beliefs, or epistemic schemata, that continue to change beyond adolescence. In essence the RJ model and other related models suggest that students enter college as naive epistemologists and that professional growth in ill-structured domains depends on the development of a sophisticated set of assumptions about the uncertainty and complexity of knowledge.

Critical Thinking Project. In this respect our project sought to focus on elements of critical thinking and reflective judgment specific to the classroom experience, from the freshman year right through to the first year of

graduate studies. As stated by King and Strohm-Kitchener; "No single model of intellectual development can capture and adequately describe all the complexities of human reasoning. Models, however, can provide heuristic tools that may be used to help understand some basic differences in the ways students reason and make judgments. They can also help educators learn how to take these differences into account in encouraging students to think more reflectively and make more reasoned judgments." (1994, pp.223-224)". It was in this spirit and with these general goals in mind that this project was initiated.

The next part of our project presents an exploration of college instructors' assumptions and beliefs about college students. This study addresses the overlooked dimensions of college faculty perceptions of their students with respect to critical thinking abilities and basic epistemological beliefs held by those same instructors. The second part of our project invited college faculty to employ classroom strategies based on the RJ model described above. Faculty from such diverse areas as English composition, counseling and school psychology (first year graduate study), resource management and teacher education were represented.

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An Examination of Professors' Epistemological Beliefs and their Assumptions about the Reasoning of General Education Students

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Thinking About Thinking: A Constructivist Approach to Critical Thinking in the College Curriculum

A project supported by the Institutional Enhancement Grant program at the University of Wisconsin -- River Falls from July 1, 1994 to June 30, 1995;

An Examination of Professors' Epistemological Beliefs and their Assumptions about the Reasoning of General Education Students

Research dealing with the epistemological development of young adults has helped college professors understand how their students reason about and resolve ill-structured problems (see Chapter One of this monograph). To date, however, researchers have largely overlooked two important variables: (1) epistemological beliefs held *by* college faculty members themselves; and (2) faculty members' assumptions *about* college students' reasoning. The purpose of this chapter is to report on efforts to investigate the beliefs of seven general education faculty, including their assumptions about "typical" undergraduates' approaches to reasoning. An important outcome of this research is the degree to which it informs a discussion of implications for translating theories of adult intellectual development into effective methods of college teaching. Therefore, examples of such methods comprise the remaining chapters of this monograph.

Background

Elaborating on Chapter One, experts in educational and developmental psychology have concluded that traditional conceptions of critical thinking and cognitive development fail to capture a larger set of reasoning abilities necessary for making decisions in the face of complex adult problems. Consequently, one expert (Resnick, 1987) has catalogued key features of higher order thinking (HOT) necessary for the construction of meaningful knowledge. According to Resnick, HOT is non-algorithmic, complex, and often yields multiple solutions; it also involves uncertainty, nuanced judgment, and the application of multiple criteria. Another expert (Schommer, 1990) has argued that many complex tasks -- for example, reading comprehension, essay writing, and statistical reasoning -- depend on epistemic beliefs that exist as independent cognitive dimensions. Schommer refers to these dimensions as epistemological beliefs, including beliefs about ability, the certainty of knowledge, and the speed of learning. Still others (Facione, Sanchez, & Facione, 1994) have identified general intellectual dispositions that influence the willingness of college students to execute critical thinking skills in specific situations. These include the disposition to be open-minded or to seek truth in the face of evidence that is contrary to one's beliefs.

Each of these experts has articulated an aspect of critical thinking that is affected by developmental patterns which evolve beyond adolescence. Beginning with work by Perry (1970), these patterns have been more generally referred to as post-formal operations (Commons et al., 1990), dialectical reasoning (Baseeches, 1986), and epistemic cognition (Kitchener, 1983). These conceptions are alike in that they define adult reasoning in terms of personal epistemologies developed by young adults (see Greeno, 1989; Scheurman, 1993), especially their assumptions

about authority and evidence and their beliefs about the limits and certainty of knowledge itself. As Russo made clear in Chapter One, the most rigorous theoretical paradigm to emerge from these efforts is the Reflective Judgment Model (RJM) (King & Kitchener, 1994), in which seven stages of post-formal cognitive development are described. Since the ability to make reflective judgments is especially important in "ill-structured" situations (those characterized by complexity and uncertainty, incomplete or antithetical information, and the possibility of multiple solutions; Wood, 1983), and since adult life is rife with ill-structured problems, the level of reflective judgment displayed by college students when approaching such problems is therefore a critical variable to consider when seeking ways to best facilitate their general education.

Although models such as RJM have enhanced our understanding of how college students reason about ill-structured problems, recommendations for translating theoretical knowledge into the practice of general education have been slow to emerge, and where they have occurred, such recommendations have been vague or overly general. There are several plausible reasons for this lack of response on the part of college faculty. First, many faculty members may not be aware of current research on adult intellectual development. Second, they may have failed to sufficiently consider either their own beliefs about knowledge and learning or the personal epistemologies that guide the intellectual habits of their students. Finally, to the extent that faculty have considered student epistemologies, it is also possible that professors have *misjudged* the intellectual maturity of their students, leading to false expectations and misguided assignments. In any case, since faculty perceptions influence the curricular and instructional decisions they make every day, it is safe to say their epistemological beliefs, as well as their perceptions of students' beliefs, are important variables to consider when discussing the nature of general education. Unfortunately, the extant literature on adult intellectual development shows little attention to these variables. Research that has been reported suggests that faculty members' understanding of changes that take place among college students are often related more to identity than to cognitive development (Froberg & Parker, 1986), and that faculty members themselves appear to hold a wide variety of epistemological assumptions (Beers & Bloomingdale, 1983).

On the positive side, one researcher (Dings, 1989) conducted a study designed to answer the following question: Using Reflective Judgment theory as a framework to describe reasoning, what level of reasoning do faculty members associate with their students? To address this question, Dings developed a Reasoning Description Questionnaire (RDQ), which he administered to 46 social science faculty at a liberal arts university. Several results emerged from this study (see Figure 1): (1) faculty tended to *underestimate* the cognitive complexity of freshmen students (they considered stages 1 and 2 most representative of their "typical" freshmen students, whereas research shows averages for freshmen around 3.6); (2) faculty tended to *overestimate* the

reasoning of senior students (they rated stages 5 and 6 as most representative of "typical" seniors, whereas averages have hovered around 4.0); (3) faculty clearly saw differences between students' reasoning and their own, rating themselves almost exclusively at the highest levels of reflective judgment. These findings were consistent across three separate dimensions of reflective judgment (the role of evidence and authority in making judgments and the nature of knowledge). To date, this study has not been replicated, nor have the results been tested using any means other than the Reasoning Description Questionnaire. Furthermore, the implications of Dings' research have not been sufficiently fleshed out.

Figure 1. Faculty ratings by educational level on the Reasoning Description Questionnaire (Dings, 1989, with permission). Bars represent average ratings for each Reflective Judgment stage, based on this rating scale: 4=very descriptive; 3=fairly; 2=slightly; 1=not descriptive).

Against this background of theory and research, one goal of this project was to design a study aimed at enhancing our understanding of faculty members' epistemic orientations and to examine the nature of their assumptions about college students' reasoning. A second goal of the project was to use results of the study as a basis for making specific methodological recommendations relevant to undergraduate general education.

Methods

Our study was designed to extend existing research in several important ways. First, although a small data set was used (n=7), a large measure of rich qualitative data was obtained. Second, the study was designed to provide either corroborating or disconfirming evidence to claims made by Dings (1989). Finally, discussions about Reflective Judgment were broadened to include two additional constructs: first, we wished to consider the critical thinking *dispositions* held by faculty members; and second, we wished to consider several pedagogical concerns, namely how (if at all) do faculty seek to promote reflective judgment in undergraduate general education. As a result, it was hoped that the study would enhance our ability to translate theoretical and empirical conclusions into practical and generalizable recommendations for undergraduate general education.

Research questions

As indicated earlier, the specific research questions guiding this study were: (1) what is the nature of college professors' personal epistemologies (specifically, what conceptions do general education faculty hold toward critical thinking and reflective judgment and how do they seek to foster these skills among their students); (2) what assumptions do faculty members hold toward their typical students' reasoning capabilities and approaches, and how do these assumptions influence their teaching behavior?

Data source

Seven faculty members agreed to serve as participants. These individuals volunteered to be involved in the *Thinking About Thinking* faculty development workshops, raising our initial expectations that they would be more interested and knowledgeable than the "typical" university professor. Each of the seven teach undergraduate general education courses at The University of Wisconsin - River Falls, a public, liberal arts university with an undergraduate enrollment of 5000. The faculty represented a range of experience (from 1-33 years teaching general education) and academic domains (agricultural science, art, chemistry, English -- one literature and one composition -- philosophy, and resource management).

Instruments

Background Questionnaire. Each faculty member received a questionnaire to complete before being interviewed by a graduate student. The questionnaire was designed to gather general information on courses and students taught by each professor, focus of teaching, and prior experience, including background knowledge in critical thinking and reflective judgment.

California Critical Thinking Disposition Inventory. Faculty members also received the CCTDI (Facione & Facione, 1992), an assessment of individual dispositions along seven dimensions. We paid special attention to the *Maturity* sub-scale since it is conceptually very similar to Reflective Judgment. The CT-mature person is described as one who

> ... approaches problems, inquiry, and decision making with a sense that some problems are necessarily ill-structured, some situations admit of more than one plausible option, and many times judgment must be made based on standards, contexts, and evidence which preclude certainty (Facione et al. 1995).

Two other sub-scales were especially relevant given our focus on Reflective Judgment: *Truth-*

seeking, which captures the disposition to desire to honestly seek the best knowledge even when findings do not support one's preconceptions, beliefs or self interests; and *Open-mindedness*, which captures a tolerance for divergent views and sensitivity to the possibility of one's own bias. Representative items from each of these scales are presented in Appendix A.

Interview. Approximately two weeks after receiving the Background Questionnaire and CCTDI, the seven professors were interviewed by one of two graduate students. Interviews were conducted in the office of each faculty member and took approximately 30 minutes. The interviews were tape recorded and later transcribed.

The interview focused on the goals of general education as well as the specific goals of professors' courses, teaching methods used to accomplish such goals, kinds of assignments given to students, and methods of assessing student achievement. Each faculty member was asked if he or she would share copies of syllabi, assignments, activities or projects, and methods of evaluation. Faculty were also asked to define "problem solving" and "critical thinking" and evaluate whether, based on their definitions, they felt they engage their students in such activities. Finally, they were asked to discuss major barriers they face in accomplishing their goals in general education.

Members of the research team read the transcribed interviews and discussed their content on several occasions, looking especially for general patterns concerning the relationship between professors' thinking and their perceptions of students' thinking.

Approaches to Thinking Sorting Task. At the end of the formal interview, the graduate student administered an *Approaches to Thinking Sorting Task* (Scheurman, 1993) to each professor. To complete this task, participants were presented the following ill-structured problem:

> *There is a continuing debate about what is the best way to teach reading. Some people argue that a phonics (or code-oriented) approach is better, while others prefer a whole language (or meaning based) approach. Both sides of the issue have been supported by researches, teachers, school officials and parents.*

Professors were then given fifteen one-paragraph responses to the problem and instructed to place three in each of five piles ranging from "least to most reasonable" (samples of the responses can be seen in Appendix B). The statements represented prototypic reasoning at five different stages of reflective judgment (stages 1 and 2 were collapsed, as were stages 6 and 7).

After sorting the responses, faculty were instructed to explain, in essay form, how the statements in each pile shared a general approach to thinking, as well as what they perceived as the general trend across piles.

Follow-up Activities. Approximately two weeks after the initial interview, faculty were presented with a modified version of the *Approaches to Thinking Sorting Task*. Although the problem and the statements were identical, the piles were presorted this time according to Reflective Judgment Model criteria. Professors identified the presorted pile that most accurately portrayed their own thinking as well as the one they perceived to be most representative of their "typical" students' thinking. Once again, they explained their perceptions in writing.

Also two weeks after the interview, immediately before the start of the first workshop, professors completed the CCTDI a second time. This time, however, they were asked to respond to each question as though looking through the eyes of their "typical general education student".

Results

Background Questionnaire

Six of the seven professors reported that their general education courses were comprised mostly of freshmen. Using a forced choice format, three professors reported their primary focus of teaching in general education classes was teaching "a body of knowledge and/or set of concepts," two reported it as "a mode of inquiry and/or set of interrelated values," one as " skills and/or a set of procedures," and one as "dispositions and/or the formation of a set of beliefs." Five of the professors had never heard of Reflective Judgment theory, two had heard of it, while none regarded themselves as "very familiar" with it.

Critical Thinking Disposition Inventory

The results of the disposition inventory are summarized in Figure 2. A score of 40 on any subscale is considered a benchmark, above which students are thought to exhibit a propensity for maintaining that disposition. The middle line represents the "average freshman" (norms were established during previous studies at similar institutions; see Facione et al., 1995). The top line shows the mean responses of the seven faculty when speaking for themselves, and the bottom line represents the faculty's mean responses when asked to complete the inventory through the eyes of a "typical general education student." As Figure 1 shows, faculty members *underestimated* the sophistication of students' dispositions toward critical thinking. It also reveals the marked gap that exists between faculty dispositions and the perceptions they have of their students' dispositions. These findings were consistent with the results of Dings' (1989) study using a Reasoning Description Questionnaire.

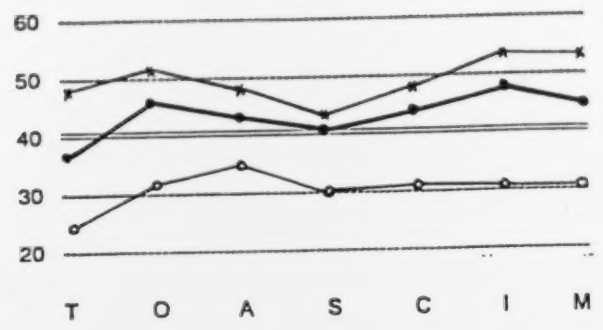


Figure 2. Profile of average faculty scores on the California Critical Thinking Disposition Inventory (Facione & Facione, 1992). Top line=faculty; middle=average freshmen; bottom=faculty perception of freshmen. T=truth-seeking; O=open-mindedness; I=inquisitiveness; M=maturity, etc.

Approaches to Thinking Sorting Task

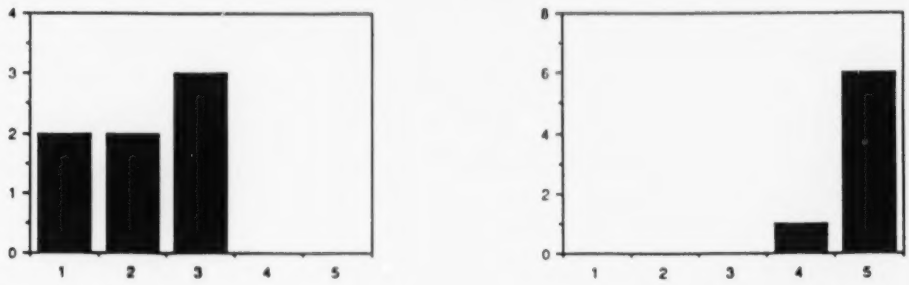
Scores on the *Approaches to Thinking Sorting Task* were obtained by computing a correlation between faculty rankings of prototypic statements and the rankings "keyed" to Reflective Judgment criteria. College students receiving "epistemic training" (workshops designed to apply reflective judgment criteria in ill-structured situations) have typically performed at correlations around .80, whereas students who have not received such training typically exhibit correlations around .5 (Scheurman, 1993). The mean correlation of faculty members in this study was .81 (median = .77), which, along with numerous explanations for why statements were sorted as they were, suggested that these professors had an intuitive grasp of Reflective Judgment theory and how students' personal epistemologies affect their approach to ill-structured problems. For example, one professor summarized the pattern of responses in this way:

> From least reasonable being those who already know the truth based on narrow personal experience to most reasonable being those who recognize that the truth tends to be "more truthful" when put into context and [who] realize that multiple truths need not necessarily be contradictory (that they can actually co-exist even in the same context).

In short, faculty members sorted protocols into piles that were relatively consistent with stages of reflective judgment, even though most had neither read nor heard about RJM. We also noticed an interesting trend among professors to explain their rankings in terms of domain-related criteria. For example, an English professor selected as more reasonable those statements that were written in "the impersonal, rather passive professional style" simply because this style was "more

recognizable" than one using "informal syntax and vocabulary." A Chemist, on the other hand, confessed that she was looking for a "scientific way of thinking," one that "comes up with conclusions ... based on observations." Finally, a Philosopher selected statements that accepted the authority of a single expert (actually considered LEAST reasonable by RJM) as more reasonable than those that left truth up in the air since they at least assumed a minimum "criterion of truth" (i.e. an expert view), whereas those who were willing to wait until experts divulged the truth at a later time were exhibiting a "defeatist" attitude.

Figure 3 shows the results of the *Approaches to Thinking Follow-up Activity*. Although not quite as pronounced as it was on the second administration of the CCTDI, the pattern of *underestimating* the capabilities of students was once again apparent. Two faculty chose stages 1 and 2 (collapsed into one pile), two others stage 3, and three others stage 4 as representative of their students' reasoning (recall that previous research suggests average levels of thinking among these students is stage 3.6). However, the perceived "gap" between faculty and student reasoning was very pronounced, since all but one faculty member indicated their own approach to thinking as best represented by the highest pile (prototypic of stages 6 and 7).



A. Reflective Judgment Stage B. Reflective Judgment Stage

Figure 3. Approaches to Thinking Sorting Task. A=frequency of statements selected by faculty as representative of typical students; B=as representative of self.

Interview

Although it is beyond the scope of this chapter to detail the qualitative findings of the study, an interesting pattern did emerge from the initial interviews. Although most faculty members expressed frustration at institutional barriers preventing opportunities for critical thinking, many of them seemed to place the ultimate blame on themselves (collectively). The Chemistry professor said "students are very willing to accept the teacher or the book; this is the way we have trained them." Other faculty members made statements that *implied* shortcomings in the way we teach general education; however, it was often not clear whether they were conscious of those shortcomings. For example, an Art professor described efforts to get students to provide "what

I'm looking for," while it was not entirely clear what an English teacher meant by his desire to elicit "choral responses" from students. A professor of Natural Resources confessed that important discussion topics are usually left for "senior" classes since the demands of content require "lecture only" in freshman classes. Finally, a veteran Agricultural Science professor proclaimed, "I feel very strongly that we have to do something, because I just don't see a sparkling eye in a lot of students who we simply go in and talk to for fifty minutes."

Some faculty members were more explicit about their knowledge of "what to do" to promote critical thinking in their general education classes. It was our sense that most of these professors believe their major responsibility, *at least during the first two years of general education*, is to convey a specified amount of content in a particular domain. This seemed to be a source of frustration for most teachers, who lamented the constraints of time and coverage and wistfully discussed their desire to make general education "something more." For example, one professor became quite animated about an important project that calls on students "to act on an environmental issue." Interestingly, when he realized that he had drifted from his discussion of "freshmen, general education" courses to upper division courses, he revealed a (perhaps subconscious) concern about *where* such exercises should occur in the curriculum: "Oddly enough, in my senior level class -- there's a lot more writing in a senior level class -- where they're responding to broad kinds of questions, ... [they] have the responsibility to write a *good* paper, to be willing to question." Another professor said that "perhaps we don't really spend enough time to give students a chance to really pursue some of the alternatives." Similarly, another professor confessed that "I like to teach literature and I like to talk, and I probably do too much time doing that. I need to let students talk more than I do in my class, especially Freshman English."

We labeled a final pattern of responses as "misconceptions and contradictions about development and developmentally appropriate instruction." This observation was based on a high frequency of comments concerning student apathy toward thinking, coupled with an apparent struggle among faculty to explain the roots of this phenomenon. For example, one professor listed the major barrier to accomplishing his goals in general education as "what I perceive as apathy -- which may not be apathy, after all, ... [but] fear that they don't even know how to go about asking me to help them .... Some of them are just unprepared for what they get into here, ..., they're not ready for what we're expecting them to do...." The interesting feature of this explanation is that the teacher seems to be aware that what he perceives as apathy is actually a condition of students confronting situations and problems that stretch their intellectual capacities. Although others were more explicit in their claims about apathy, they sometimes revealed implicit contradictions in their perceptions of students' unwillingness to engage in critical thinking. Consider this English professor: "...most of my freshmen really do not like to talk, and the kinds of material I teach are

not always discussible, like, I'm simply passing on information ... that [isn't] a very interesting topic of discussion." In summary, it appeared that faculty were *implicitly* aware that they were failing to sufficiently challenge their students, or worse, they were boring them with too much information too early in students' college careers. However, these professors were persistent in offering student apathy as the *explicit* explanation for the learning and motivation problems among students in their general education classes.

Discussion

The purpose of this study was to examine the epistemological assumptions of general education professors, including their assumptions about the reasoning abilities of "typical" undergraduates. The results of the study corroborated previous findings, namely that college professors tend to underestimate the sophistication of personal epistemologies maintained by "typical" students in their own programs. This finding can be generalized not only to their perceptions of students' dispositions toward critical thinking, but also to the specific approaches employed by students when confronted with ill-structured problems. In general, professors tend to assume that their students possess epistemic beliefs consistent with the earliest levels of reflective judgment, whereas they view their own approach to reasoning as consistent with the very highest stages. These results suggest several implications for the way we teach general education.

The most important implication is reflected by the self-fulfilling nature of comments made by faculty. Consider this quotation from one of the initial interviews, which serves to summarize many of the patterns we observed among faculty assumptions:

> I think we still tend to use that old philosophy.... We are the knowledge; they are seeking knowledge, so we are to convey our knowledge to them as quickly and as efficiently as we can without giving, I think, ample thought to [the questions] 'do we need to do this much,' 'how much should they be doing on their own,' and if we can guide them to a point, can they take over and move ahead? I don't think we do enough ... analyzing of what we should be doing with these students. And I think we're awfully traditional in what we do in many of our general studies courses.

In theoretical terms, this professor seems to be saying that we are not expecting the intellectual maturity of students to be very high -- indeed, not as high as it actually is. If this is the case, then perhaps professors' perceptions of student apathy are actually the result of having failed to sufficiently challenge the students that professors perceive to be bored. To "simply give them information and ask them to go on and basically solve [a] problem" (which the professor just

quoted went on to say was the basic approach to problem solving in his introductory classes) is to reinforce the false notion that all problems are well-structured and that knowledge is at best discrete and simple and at worst dualistic (right or wrong). In short, if faculty assume general education students are operating at RJM stage two, then they will teach them accordingly. Students will then respond with justifiable apathy, to which professors will, in turn, become frustrated. Looking at the data in light of this potential self-fulfilling mindset, we concluded that three specific conclusions were warranted at this time.

First, among the professors we studied, most of their perceptions of *apathetic* student behavior could just as plausibly come about as a result of their contact with students who were simply *immature* in an intellectual sense. Second, to the extent the statements made by these professors reflect pervasive dispositions toward students and general education, it appears that while faculty may wish to view themselves as "stage 7" reasoners, they often treat students in ways that are consistent with lower levels of reflective judgment. Finally, we concluded that the near future looks grim, not only for many general education students, but also for many of the frustrated professors who serve them. Several faculty members expressed intentions to continue transmitting information in beginning classes, with real efforts to promote critical thinking reserved for senior students and above, even though this mode of operation concerned and frustrated them. Exceptions to this pattern were the philosopher, who spoke passionately about the need for rigorous examination and argumentation as well as the importance of developing a healthy skepticism, and one of the English professors, who devoted much of the interview to a discussion of the "processes" of thinking and writing rather than the "product" of knowldge in the domain. Unfortunately, these professors appear to be in a minority. Furthermore, whereas these two faculty members were less disenchanted than their colleagues with the frustation of time for coverage of content, they were nevertheless frustrated at the persistent intellectual naivte displayed by their younger students.

Conclusion

Research on the intellectual development of young adults has contributed greatly to our understanding of how college students reason in ill-structured situations. Fortunately, recommendations for college teaching based on knowledge about students' epistemological orientations have begun to emerge (see King & Kitchener, 1994; Scheurman, 1995, in this monograph). Unfortunately, many instructional decisions continue to be made by faculty who have given little thought to the ill-structured nature of adult problems or who see higher education as a place where knowledge is merely transmitted from authority to novice. Especially with increasing numbers of non-traditional students entering general education programs, faulty

assumptions about the reasoning capabilities of students can lead to curricular decisions that are as developmentally inappropriate as decisions made without attention to students' epistemologies at all. As in the Dings' (1989) study, the findings presented here "raise questions about how educators arrive at assumptions about students' reasoning skills, how they translate these assumptions and expectations ... into assignments and grading criteria, how students understand these expectations, and whether and how discrepancies between educators' assumptions and students' skills are addressed" (King & Kitchener, 1994, pg. 169). Given recent interest in constructivist theories of learning, answers to these questions seem essential if general education is to resume the influence and effectiveness it was once assumed to have.representative of self)

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Note

Faculty members in Study #2 engaged in workshops centered around the principles of Reflective Judgment. For example, faculty read King & Kitchener's (1994) book, discussed research on reflective judgment as well as research completed during this project, considered recommendations for fostering reflective judgment in the college years, and revised lesson plans for their own general education courses that were reflective of RJM principles and recommendations. This component of the project occurred AFTER all data was obtained, and therefore is not reported here. However, revised lessons and ways in which faculty members translated theory into practice will be available if this proposal is accepted.

Appendix A

Descriptions of three sub-scales and sample defining items included in the California Critical Thinking Disposition Inventory (Facione & Facione, 1992).

Sub-scale	Description	Sample items
Maturity	Prudence in making, suspending, or revising judgement. An awareness that multiple solutions can be acceptable. an appreciation of the need to reach closure even in the absence of complete knowledge	• The truth always depends on your point of view. • We can never really learn the truth about most things. • The best way to solve problems is to ask someone else for the answers.
Open-mindedness	Tolerance to divergent views, self-monitoring for possible bias.	• It concerns me that I might have biases of which I'm not aware. • I shouldn't be forced to defend my own opinions. • It's important to me to understand about what other people think about things.
Truthseeking	A courageous desire for the best knowledge, even if such knowledge fails to support or undermine one's perconceptions, beliefs or self interests.	• It's never easy to decide between competing points of view. • I look for fact that support my views, not facts that disagree. • Being impartial is impossible when I'm discussing my own opinions

Appendix B

Sample prototypic responses to ill-structured problem from Approaches to Thinking Sorting Task, with corresponding Reflective Judgment Model stage.

Pile #1 (RJM stages 1-2)

I know for certain that whole language instruction is the best approach to reading because I read about the issue in my educational psychology text. In fact, I have never known anyone from a meaning-based reading background who wished they would have learned to read in a different way. Of course, companies that publish phonetic instructional programs are paid to say that phonics is a better approach. This may lead some people to believe that phonics is better than whole language, but they have probably not encountered the knowledge that I have. They are wrong to challenge the whole language approach until they have considered the facts available on the issue.

Pile #2 (RJM stage 3)

It seems to me that phonics approaches are better than whole language approaches to reading, but this is one of those things we just can't be certain about right now. Although there isn't much proof on either side, the situation is only temporary and teachers should not become discouraged. Educational researchers are investigating the issue, and we'll eventually know for sure whether phonics should replace whole language altogether. In the meantime, people can believe what they want about the best way to teach reading. Since authorities in the field have not yet discovered the best way to teach reading, I advocate sticking to traditional methods, including code-oriented instructional programs.

Pile #3 (RJM stage 4)

Without the resources for a completely thorough study, it is virtually impossible to know which approach to reading instruction is better. There is some evidence supporting phonics, but a large constituency of teachers still favors whole language. We can't get inside the head of children and find out what they are thinking, so what people believe about the issue is likely to depend on the kind of training they received when they were young as well as the experiences they have had with reading. Given my personal background, it is just too uncertain to make a decision one way or the other on this issue. However, people from a different background have the right to maintain a different position.

Pile #4 (RJM stage 5)

There is evidence on both sides of the issue, and it is unlikely we can ever know without a doubt. On the one hand, research has shown that skilled readers decode segments in words, which argues for phonics. Parents often look at the quick, visible results of phonetic instruction and decide it is best. Other evidence, however, suggests that the context of a word is most important. From a teacher's point of view, understanding words in context is often more important than just saying words, which would make whole language the preferred choice. People look at evidence differently because of their own perspective. Since teachers are responsible for insuring that children learn to read, I lean toward the whole language method of instruction.

Pile #5 (RJM stages 6-7)

Experts tend to agree that skilled readers rely more on an awareness of phonics to decode words, whereas less skilled readers rely more on context to establish meaning of words. Since these claims are based on educational research, it is important to consider the assumptions and methods used in each study. It is also necessary to compare this kind of evidence with arguments based on theory or personal experience. In the case of reading, whole language has some positive features, but the potential consequences are simply too great to abandon code-based instruction in favor of a program that has not been adequately tested. New evidence can always lead to a different conclusion on such complex issues; for instance, it may turn out that phonics and whole language are not incompatible with each other. In light of the evidence we have, however, it is more justified to encourage expertise through phonics instruction.

Teaching Ethics Through Essay and Short Stories

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Abstract

This project was an attempt to teach ethical reasoning in a graduate school counseling course. Students first approach to ethical reasoning in a professional counselor program is characterized by an appeal to authority. Students want to know as precisely as possible the "proper" and "right" way to practice counseling in schools and agencies. While current ethical standards (such as the American Counseling Association Standards - revised May, 1995) present important guidelines, actual practice may present complex and ambiguous ethical dilemmas. Selected essays and short stories were paired and students were asked to entertain the complexity and ambiguity of ethical dilemmas.

Course Description

COUNS 615 (Social and Cultural Foundations of Counseling) is a required core course for all students seeking certification as a school counselor. Typically this is a course taken very early in the graduate program. This seminar attempts to introduce the students to ethical, legal, social and cultural aspects of the counseling profession. More generally speaking, it is the intent of this course to introduce beginning students in a Master's level counseling training program to the role and

responsibilities of professional counseling as practiced in public school settings.

Project Goals and Objectives

As mentioned above, beginning students in professional counseling want to conduct themselves in a manner that is ethical, within legal boundaries, and is sensitive to issues of culture, gender and social class. Initially students typically seek to adopt ethical standards as a somewhat legalistic document that should cover many if not most dilemmas presented and give them a clear path to ethical decision-making. While this is sometimes the case in actual practice, professional counselors need to be prepared to struggle with ill-structured dilemmas. Such cases can provide multiple incomplete and competing perspectives. Frequently, in such cases ethical guidelines are helpful and necessary but cannot uniformly and with any degree of certainty determine a definite course of action.

At these times, when confronting ill-structured dilemmas, students need to go beyond the recourse to ethical standards as the final authority and engage in a complex process of reasoning leading to at least a temporary decision or course of action. This is especially true when considering matters of gender and cultural sensitivity in counseling cases. The student must first understand the

nature of an ill-structured case with respect to gender, culture and ethics. Second, the student must find a means to construct, often from incomplete and uncertain evidence, the competing demands and multiple perspectives inherent in the dilemma. It is with this rather large goal in mind that this project was undertaken.

General Procedures

Background. Two prior publications served to inform this project and provide support and background. The first of these two is Robert Coles' "The Call of Stories: Teaching and the Moral Imagination" (1989). Here Coles presents short stories, poetry and novels as a means of social inquiry and moral analysis. In some respects he sees the use of literature in medical and legal training as an antidote to the often dry, discursive reduction of richly textured behavior to predetermined categories. He worries that in medicine, in particular, that patient's deepest concerns are frequently overlooked in the rush toward a diagnosis and subsequent treatment regimen. He argues persuasively that professional training needs to compliment the intellect with emotion to release imaginative responses. He states; "In order to respond, one remembers, one notices, than one makes connections-engaging the thinking mind as well as what is called one's emotional side" (p.128).

In a recent edition of "Change-The Magazine of Higher Learning", Mark Weisberg and Jacalyn Duffin ("Evoking the Moral Imagination: Using Stories to Teach Ethics and Professionalism to Nursing, Medical and Law Students", January/February, 1995) takes up Cole's challenge. This interdisciplinary seminar used essays and short stories in a course titled "Images of Nurses, Doctors and Lawyers in Literature". Through the use of collaborative teaching and journal writing, students wrote about and discussed works by Flannery O'Connor, Irwin Yalom, Louis Auchincloss, Susan Glaspell, among others. The authors believe their seminar experience to be part of a general trend in professional training toward encouraging reasoning in Cole's emotional domain through the use of narrative to build imagination and empathy.

The Project. Students were given a list of six paired readings (the reading list was short due to summer session restrictions). The first set of readings used the theme "Looking Through the Lens of Gender" and paired Susan Glaspell's short play "Trifles" ("Theater Magazine", 1917) and Perri Klass' essay "The Feminization of Medicine" from her memoir "Baby Doctor" (1992). The second set of pairings was titled "Individualism and Community" and included Anton Chekhov's story "Gooseberries" ("The Portable Chekhov") and John Gardner's essay "The Individual and Society" (1976).

The third theme was "To Help or Not" and included Alice Adam's short story "Oasis" (1985) and Tillie Olsen's story "I Stand Here Ironing" (from "Tell Me a Riddle", 1956). The first two sets of readings paired fiction and nonfiction. The final set has two fictional stories. This was done because it was felt that finding and describing the ethical dilemma would somewhat easier when an essay is presented. Therefore, the final set, by presenting two works of fiction, attempts to present a greater challenge in discovering the dilemma as it is embedded entirely in narrative and dialogue.

Students were asked to write a one paragraph description of what they perceived as the ethical/moral dilemma. They were asked to write this without any judgment and to "balance" the competing ethical choices as having intially equal weight and worth. Students were further cautioned not to draw any conclusions or to "take sides" in their paragraph. They were told deciding on a plan or resolution would be the result of the seminar discussion. On each Wednesday morning the paragraphs were clipped and entered unto larger sheets, copied and distributed to all seminar participants. Students read all fifteen paragraphs prior to the seminar discussion on the following morning. Journal writing followed the open seminar discussion in which students could compare their "reading" of the moral

dilemma with others and reflect on the group resolution. While there was inevitably some early discussion of which perspective or point of view was the "correct" one, I endeavored to direct the early part of the group discussion to a focused consensus of the complexities of the moral dilemma. I did this to suggest that this was an essential step prior to coming to any conclusion or course of action. I wanted to weigh evidence and prespectives fully and completely before moving forward with a judgment leading to a course of action or plan.

Relationship to Reflective Judgment Model

This particular assignment was structured to facilitate Stage 5 Reasoning. King and Kitchener (1994) state that Stage 5 Reasoning understands that knowledge is connected to the context and the perceptions of the observer(s). There are also potentially multiple interpretations of knowledge. This is especially true of ethical/moral dilemmas in professional counseling. However, it is also an accurate depiction of counseling in general. Typcially, the counselor must seek understanding of an ill-structured problem containing incompleteness, uncertainty and ample room for disagreement. The knowledge the counselor gains from the student/client and family interview is necessarily incomplete and sometimes even contradictory. When considerations of gender, ethnicity and

social class are added to the equation, considerable complexity ambiguity can develop. In turn, the practicing counselor must attempt to understand the dilemma and chart an effective an ethical course of action.

In turn, King and Kitchener (1994) suggest that at this stage it is important to choose between alternatives without invalidating the competing hypothesis. Also, understanding patterns of relationships between alternative versions is important as well. They suggest that sample assignments might include critiquing readings from competing perspectives, summarizing relevant themes, evaluating data and evidence for each perspective and only then coming to any particular temporary resolution.

Summary and Conclusions

In reading over the student responses several times, certain patterns seem to emerge. First, at the beginning there seem to be a general focus on particulars of the stories. For example, with respect to Perri Klass' chapter from "Baby Doctor", students framed the dilemma as particular to whether of not woman docotrs were different than their male counterparts and if any differences could imply superiority. Also, initially students had a more difficult time refraining from coming to a conclusion, either directly or indirectly. For example one student labeled the men's investigation in "Trifles" as "clumsy and

rediculous". As students progressed through to the third set of readings (both fiction), the basic moral dilemma appeared to be more balanced and less dependent on the details and specifics of each story or essay. A greater number of students combined the two stories to seek a common moral dilemma, despite the very different circumstances of the two characters in the final pairing. In "Oasis" a woman of wealth and privilege ponders whether she should talk to a homeless woman as she reflects on life with her husband and adult daughter. While in Tillie Olson's "I Stand Here Ironing" a single mother responds to a social worker's request to help her daughter by a solitary reflection on her relationship with her daughter over the years. One student states: "These two stories present two ends of the self-evaluation continuum. The moral dilemma of the stories might be: What useful purpose does it serve to take a critical look at one's actions when the past cannot be changed? . . . Can one's self-examination bring change to the significant other?" This same student comment also is characteristic of a third pattern of responses consistent across pairings of readings. That is, students were more likely in the second and third pairings to relate essays and stories to their roles as future professional counselors.

While no attempt was made to clarify these patterns through a formal content analysis of student writing, there

was some confirmation of these trends in the student journal writing. Several students suggested that resolutions seemed more profound and deeper when judgment was suspended until group discussion had taken place. In this manner and others this brief and relatively nonintrusive assignment seemed to fulfill some of the characteristics of Stage 5 reasoning. Students were able to place and interpret thought and action within a context. Moreover, student writing reflected what appeared to be an increasing understanding of the qualitative nature of perspective-taking and finally to compare such perspectives in an open and comprehensive (and hopefully an imaginative) manner. These qualities, I believe, are also important qualities of effective and ethically-based professional counseling.

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"Investigating and Analyzing Interest Groups"

ABSTRACT

Interest groups in our society are a means by which political, social, and economic causes are advocated. Early in the semester, I asked students to choose an interest group they would like to learn about. Before they began their research, I administered a brief questionnaire in which they described their already-existing knowledge of and/or attitude toward the group they had chosen. After they completed their research, this became a means of helping them reflect on what they had learned or how their views might have been modified. Interest groups studied included The Hemlock Society, Greenpeace, the NRA, the Sierra Club, the Ku Klux Klan, PETA (People for the Ethical Treatment of Animals), and several others.

Working individually or in groups, students analyzed their interest group, noting characteristics such as the group's members, mission statement, target audience, position on one or more issues, and arguments or methods of persuasion. Students also examined their group's tactics: they tried to determine whether the group presents an accurate picture of "the way things are" and to what extent competing points of view (which challenged those of the group) might be valid. The information they discovered became the basis

for an essay about the interest group (see assignment sheet).

The goals of the project were to help students understand how interest groups interpret information; to help students learn to evaluate the arguments or reasoning interest groups use to support a position; to encourage students to examine and consider alternative positions on a particular issue.

GENERAL COURSE DESCRIPTION

According to the department's Freshman English Manual, English 112, the second semester of Freshman English, is intended to "develop analytical, argumentative and evaluative skills" through the process of reading, discussing, and writing. The interest groups project gives students practice in each of the skills listed above.

Moreover, the reading assigned in 112 is intended to enable students to "evaluate the stylistic, structural, and substantive merits" of what they read, as well as help them "synthesize disparate points of view in reaching judgments." By analyzing position statements, essays, mission statements, promotional flyers, or advertisements for specific interest groups, students gained practice in evaluation. By considering opinions that challenged the views of their interest group, students could also attempt to understand divergent points of view.

PROMOTING REFLECTIVE JUDGMENT STRATEGY

Students in Freshman English at UWRF seem to fall within the 4-5 range of the Reflective Judgment scale of reasoning. According to King and Kitchener, stage 4 students "do not understand that the interpretation of evidence may be influenced by one's point of view or perspective" (225). By analyzing interest groups, then, students may learn how information may be interpreted to serve a particular point of view. In addition, since students also consider competing points of view, they may also "learn to determine whether it is possible to arrive at an appropriate integration of the competing alternatives," which is a goal for stage 5 thinkers (253).

OUTCOME AND EVALUATION

Most students chose groups they were favorably disposed toward (many students who were hunters, for example, choose to research the NRA) or groups they already had some knowledge of. From a critical thinking standpoint, this is somewhat problematic, since students sometimes allow their already-existing beliefs to be reinforced through selective use of evidence. As King and Kitchener point out, stage 4 thinkers often "choose evidence that fits their prior beliefs" (59). For the most part, initial attitudes expressed by students toward the groups did not change. I am not suggesting that changing one's view is necessarily a sign of good reflective thinking, but rather that some modification of one's preestablished notions does likely indicate an appreciation of complexity.

Some students did change or qualify their initial attitudes. A few students who were initially sympathetic to environmental groups found themselves criticizing some of their groups' tactics or activities. One student, an NRA supporter who had graduated from its Hunter Education program, was disappointed to discover that the organization seemed to be much less involved in promoting safety than he had thought; instead, he stated, "I now tend to believe it is more of a political power than an educator and an awareness group."

Many students did not really focus on how the interest group interprets information: they appeared more interested in the issues themselves and in arguing for why a particular position was good or bad. Most often, the problem was getting the students to be more analytical, to dig into things a little further. More than one student who wrote about the NRA, for example, argued vehemently in support of that group's attempt to preserve the Constitution, but did not try to examine the language of the Second Amendment in detail, which suggests there is another side (or at least some qualification) to the issue of the right to bear arms.

On the other hand, some students made quite thoughtful observations about how interest groups present information or arguments. Some students noted that interest groups tend to select information that serves their own point of view, while omitting or ignoring information that might support a contrary view. For example, students pointed out how some environmental groups seemed to use worse-case scenarios as examples in order to persuade the

general public. Another student explained that a particular animal rights group focused on the horrors that humans visited on animals for frivolous reasons but did not acknowledge any valuable knowledge or valid use (medical or otherwise) gained from animal research or experimentation. These students showed that they understood the truth was more complex than the picture they were being shown from the perspective of the interest group.

In some cases, students had to contend with a lack of specific information. One student, for example, focused on the issue of using chlorine to bleach paper. This was a practice detrimental to the environment, according to an envrionmental interest group. After speaking with representatives at a mill, who attempted to allay the concerns raised by the environmental group, she was unable to determine how much chlorine is used and how damaging its effects are. Thus she reached an impasse in her research: it was not possible to learn exactly how information was interpreted, because it was not possible to find what the true information (i.e. "the truth") was. This may have been a good illustration of King and Kitchner's point that "the uncertainty of knowledge is a consequence of the inability to know directly" (252). Obviously, she could not go and measure chlorine levels herself; she depended on the knowledge of "experts" from two opposing interests. At any rate, her research partner did point out in their essay that the environmental group "singled out" Time magazine, a very visible target, as a culprit while it seemed clear that Time could not be the only offender. In spite of the difficulty they encountered, then, these students did, after all, did come to

understand that the environmental group and the mill seemed to have differing interpretations of what constituted a threat when it came to chlorine.

While many students were able to examine alternative or contrasting positions on a particular issue, they generally had more difficulty evaluating those positions. (It seems worth noting, however, that there is a difference between these students and the ones who, like the previously-mentioned students defending the NRA, hardly acknowledged a contrasting viewpoint.) One student, writing about the Hemlock Society, stated that she was a strongly religious person and therefore disapproved of euthanasia. However, after studying the group's views, she argued that it seemed unfair for people to condemn its belief in active euthanasia by appealing to religious arguments, since not all people believe in God. This struck me as a thoughtful concession. She concluded her essay by saying she found the views of the group "more acceptable" than she had initially, which seemed to acknowledge some value in an opposing viewpoint. However, she then reaffirmed her original position of disapproval, saying simply, "God has plans for everyone," so that she seemed to fall back on a relativistic means of resolving the dichotomy.

Though uncommon, there were some cases in which students did a good job of distinguishing between strong and weak evidence. The student above, for example, took a good step in this direction. Another student very perceptively analyzed how one of his group's ads used fear tactics rather than sound arguments or information to support its position. This student, by the

way, stated at the outset that he thought "about 90% of what the group [was] doing is right."

RECOMMENDATIONS FOR FUTURE USES OF RJ IN THE CURRICULUM--A TIP FOR TEACHERS

A strength of the Reflective Judgment Model is its attempt to take into account "where students are" as opposed to thinking about critical thinking as simply a set of skills; students should confront their own preconceptions and reflect on their own experiences when considering alternative viewpoints. Teachers, early on, should encourage students to think about their own attitudes and also consider positions with which they disagree. Doing this early in the process of completing the assignment would allow students more time to reflect. Some student writing (including instructor response) would be good early in the process, so that students could try to identify which opposing viewpoints are the strongest and begin to process these. Asking other students in the class to help in this area would also be a good idea.

INVESTIGATING AN INTEREST GROUP Luebke

(with thanks to Ruth Wood, who conceived this topic)

For this essay you will investigate and analyze an interest group (defined here as any group of people who have a mind to change something about the way things are now or to prevent others from making changes they disapprove of).

You will be expected to find out as much as you can about what they're aiming for, how they work (both organizationally and psychologically), who their members are, who they try to persuade, how they recruit members, what they hope to accomplish (some groups may have a "mission statement" or philosophy), why they are surviving or thriving in the present circumstances, what their solid arguments are, which seem unsound, and why.

You should also show awareness of the major arguments against or challenges to this group's position (either by individuals or by other groups) and make refutations and accommodations/concessions where appropriate.

The essay itself should be about 8-10 pages long, and it should also include a Works Cited page. All research should be appropriately documented.

The paper should begin with a statement of why you are interested in this group: what your initial impressions are, reasons for liking/supporting/admiring and/or disliking/fearing/condemning them, what your level of knowledge is about the group before you begin research.

The main body should survey your research, both reporting what you have learned and explaining what you discern about tactics, biases, oversights, anxieties, motivation, and assumptions.

The conclusion should bring your reader up to date on where you stand on the group: has the research made you more or less sympathetic with the group's positions? Why? What in particular made you sympathize or reject? What advice might you extend to someone who was inclined to support or reject this group (this might include "read this piece" or "listen to _____" or "consider _____").

DOING THE RESEARCH

I would like to see you join forces with at least one other student to research this project, because it will decrease the workload and because when it comes to examining arguments, every person sees things a bit differently. Having the insights of another person can be very useful. Even if you are the only student writing about, for example, a particular environmental group, you may find it useful to share information with students writing about <u>other</u> environmental groups. If you desire, you may collaborate with other students in actually writing the essay (let me know if you plan to do this). In addition to library searching, you may use interviews, the internet etc. I also encourage you to write to any group and ask for information. Some groups may charge a fee for this information, so it is good to inquire as soon as you can. Check <u>The Encyclopedia of Associations</u> in the library for some preliminary information about a particular interest group.

Constructivist Strategies for Promoting Reflective Judgment in an Educational Psychology Course

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Running Head: Constructivist Strategies in Educational Psychology

Abstract

I highlight the conceptual connections between aspects of critical thinking described by the Reflective Judgment Model, a theory of adult intellectual development, and a larger set of psychological principles derived from constructivist theories of learning. In spite of parallels between these conceptual schemes, as well as the practical implications each has for secondary and higher education, there is still a dearth of literature dealing specifically with how to translate such theories into sound teaching strategies involving young adults. I address this limitation by describing introductory activities for two units -- human development and motivation -- in an undergraduate educational psychology course. The activities are evaluated using criteria associated with constructivist learning theory in general and with the Reflective Judgment Model in particular. Finally, I argue that elements of the activities are generalizable to other levels (e.g. high school and graduate school), to other courses in teacher education, and to other domains of knowledge (e.g. the humanities and physical sciences).

Constructivist Strategies for Promoting Reflective Judgment in an Educational Psychology Course

Reflective Judgment

Epistemological aspects of critical thinking referred to as reflective thinking (e.g. Dewey, 1933) are conceptually related to a larger set of contemporary learning theories known as constructivism (e.g. Von Glasersfeld, 1989). One of the most comprehensive attempts to articulate and document elements of constructivist thinking among young adults is a seven stage theory of cognitive development called the Reflective Judgment Model (King & Kitchener, 1994). There are two reasons this theory is especially relevant in higher education. First, it addresses intellectual abilities necessary for coping with ill-structured problems (that is, complex dilemmas marked by conflicting evidence, antithetical arguments, and multiple solutions; see Wood, 1983). Second, the theory identifies changes in approaches to reasoning that typically occur during the post-adolescent years, when ill-structured problems become prevalent. Individuals operating at early stages of reflective judgment tend to ignore the ill-structured nature of many problems. Instead, they maintain a dualistic view of knowledge and often make naive appeals to authorities whom they see as indisputable sources of truth (see Table 1). Freshmen entering college often display these characteristics (Perry, 1970; (Kitchener & King, 1990). Individuals exhibiting middle stages of reasoning share a relativistic view of knowledge. These individuals are likely to accept the uncertainty inherent in problems and believe that truth is based on subjective or contextual variables. Although multiple opinions are acknowledged, they are often seen as equally valid regardless of source, situation, or evidence. Students typically make a transition to middle stages of reflective judgment early in college and remain there throughout their undergraduate years.

[Insert Table 1 about here]

The term "reflective" is reserved to describe the reasoning characteristics of individuals operating at the latest stages of the Reflective Judgment Model. As Table 1 shows, it is here that the direct relationship to constructivist theory becomes apparent. For example, King & Kitchener (1994, pg. 70, italics added), suggest that the hallmark of stage 6 reasoning is "the process of ... *constructing* tentative, personal conclusions." Within the span of several pages, the authors repeatedly highlight this constructivist theme:

> The major development of Stage 6 is the recognition that problems that are complexly understood (for example, understanding that a problem can be approached from multiple perspectives, incorporating multiple kinds of evidence) require some kind of thinking action before a resolution can be *constructed* (pg. 67).... Knowledge is *constructed* into individual conclusions about ill-structured problems on the basis of information from a variety of sources (pg. 68).... Ill-structured problems that press the individual to look for shared meaning across contexts do exist. Further, those who reason from this perspective assert -- and demonstrate -- that solutions to such problems must be *constructed* rather than simply found (pg. 70).

In describing assumptions underlying the highest stage of reasoning (stage 7), the authors reiterate that "knowledge is the outcome of a process of reasonable inquiry in which solutions to ill-structured problems are *constructed*" (pg. 71). Although stage 7 is more sophisticated than stage 6 in that the individual is able to understand the larger system of knowing in which conclusions are embedded, the constructivist theme from stage 6 remains constant:

> Knowledge is *constructed* by using skills of critical inquiry or by synthesizing evidence and opinion into cohesive and coherent explanations for beliefs about problems (pg. 70).... Such reasonable judgment is possible because the individual clearly understands the process of knowing as an abstract one and endorses his or her own in *constructing* what is known or believed to be true.

In summary, the Reflective Judgment Model describes aspects of critical thinking that represent an ideal many people hold for the most educated members of our society. A person who reasons at the highest stages of reflective judgment not only exhibits sophisticated critical

thinking behavior (e.g. the execution of discrete argument skills) and metacognition (e.g. the ability to invoke an effective strategy at an appropriate time), he or she also maintains a conscious awareness of individual assumptions about thinking and knowledge itself (see Kitchener, 1983). Furthermore, these epistemic assumptions manifest themselves as dispositions toward thinking and learning that have met rigorous criteria for philosophical justification (e.g. the assumption that people actively search for meaning in their world and that one should be open-minded in the pursuit of truth). Although researchers have shown how people construct knowledge at all ages and stages of human development, the Reflective Judgment Model is especially relevant when talking about college students. The reason for this is due to the inevitable confrontation with ill-structured problems that young adults face, combined with the fact that coping with such problems requires a certain level of epistemological sophistication. The extent to which college educators can hasten the growth of their students toward higher stages of reflective judgment is a question that is still open to debate (see Scheurman, 1995). Nevertheless, experts in educational psychology have posited generalizable principles of constructivist learning theory and recommended that instruction at any level be grounded in such theory (see Scheurman et al., 1995). Since the Reflective Judgment Model is based on constructivist principles, it is useful for college educators to look carefully at these general principles and their implications for designing instructional strategies.

Constructivism

Myriad reviews of constructivist learning theory have emerged over the past several years (e.g. Anderson et al., in press; Phillips, 1995; Brooks & Brooks, 1993). Most of these reviews describe constructivism in terms of a common set of principles. One principle is that new knowledge is inextricably linked to prior knowledge. The implication of this principle is that for effective learning to occur, the teacher must devise ways to make students explicitly aware of their own conceptions (and misconceptions) about a particular topic or domain (or, in some cases, their conceptions about the nature of knowledge itself). A second principle of constructivist theory is that knowledge is situated in a particular context. This implies that the

more authentic and varied the situations in which students interact with new concepts, the more likely their understanding of these concepts will transfer to novel and everyday situations. A final principle of constructivism is that contexts are not just abstract entities defined by domains of knowledge; they are formed amidst the give and take among perspectives maintained by actual people. The implication of this principle is that learning is a social enterprise that occurs best when students are confronted with multiple perspectives through dialogue with teachers and other students (see Vygotsky, 1978).

One school of education (UC-Berkeley) has adopted a developmental-constructivist model for pre-service teacher education, based on evidence that pre-service teachers tend to evolve through stages of professional development (Black & Ammon, 1992). Specifically, research at Berkeley suggests that students in their program evolve from behaviorist conceptions of pedagogy (e.g. the goal of instruction is to transmit facts and procedures by showing and telling) to conceptions that are decidedly "constructivist" in nature. For example, education students tend to adopt a view of teaching that is at first rather global (e.g. the goal of instruction is to improve conceptual understanding by engaging students in provocative activities) but which eventually becomes more differentiated and integrated (e.g. the goal of instruction is to help students develop reflective ways of thinking that can lead to better understanding).

In spite of implications of constructivist theory for learning at all levels, and especially given the intimate connection between tenets of constructivism and aspects of adult reasoning articulated by the Reflective Judgment Model, there is still a surprising paucity of reported efforts to translate theory into sound methods of college teaching. One exception to this pattern is a recent monograph that was published after a series of professional development workshops for general education faculty at a small midwestern university (Russo et al., in press). What follows is a description of two activities highlighted in that report. These activities are used in an undergraduate Educational Psychology course; each one seeks to promote reflective judgment through constructivist approaches to teaching and learning. The context is a five credit course required of all middle and secondary education majors, usually taken during the sophomore or

junior year. The class meets twice a week for 2 hours and 15 minutes; students also engage in a 25 hour field experience in a middle or high school classroom. Since most of the students are around twenty years of age, the most representative approach to reasoning is described by the relativistic stages (3 or 4) in the Reflective Judgment Model (Kitchener & King, 1990), whereas the level of reasoning desired by their professors is best described by stages 5 or 6 (Scheurman, in press). It is also common for a few older, non-traditional students to be enrolled in each class. These students may already be operating at higher stages of reflective judgment (in fact, this is a common observation made by professors of the course). Each activity will be described separately, and then both activities will be evaluated collectively in light of the constructivist learning principles described above.

Activity One:

Developmental Theory and Students' Social-Moral Problems

This activity is designed to introduce the first unit of the course on adolescent development. The lesson has four specific objectives. Students will: (1) begin to understand the nature, function, and limitations of psychological theories in general; (2) identify some of their own and their colleagues' personal theories about an adolescent "problem" (as well as reveal their "theories about theories"); (3) become familiar with several prominent developmental theorists; and (4) learn some of the "rules of engagement" by which the class will operate.

Materials

In addition to one hand-out designed by me (Appendix A), there is a collection of hypothetical statements in which a textbook author (Sigelman & Shaffer, 1991) synthesizes seven psychological theories by imagining that seven famous theorists were asked to offer an explanation for the behavior of a male and a female teenager who find themselves faced with an unexpected pregnancy. (For example, how would Freud explain the actions of the young couple? See example in Appendix B.)

Procedures

Private responses and group interaction. When students enter the classroom, they receive a copy of the student handout with a number at the top indicating their group assignment. Each student sits at a numbered table and is immediately instructed to begin thinking about the issue of teenage pregnancy. For example, students are asked to list at least three reasons why our society is facing this "problem" and then to synthesize these into a preliminary "theory" of adolescence that explains the phenomenon. After everyone has had at least 10 minutes to consider these questions privately, I ask them to proceed with step 2, in which individuals share their reasons and discuss one another's initial theories.

Whole class discussion. Following 10 minutes of group interaction, each group designates a spokesperson who summarizes the common themes that emerged; This is followed by open discussion of individual's specific reasons for the high incidence of teenage pregnancy in our society. I probe students for deeper responses, trying to encourage them to "think like a theorist." For example, when a student says something like "teenagers are bombarded with media messages condoning casual sex," I encourage them to consider the nature of the relationship between watching a behavior on television and engaging in the behavior itself (foreshadowing a discussion of social learning theory). Or, when a student says "adolescents think they will make themselves happy if they have a baby," I press them to consider their own assumptions about human nature (e.g.: What is your definition of "happiness" and what drives people to seek it? What are some possible causes of teenage *unhappiness*? What is it about human nature that makes teenagers think having a baby will satisfy them and why are they often disappointed?). Finally, I press students to see the importance of underlying assumptions by asking them to speculate about my own assumptions in making the assignment (e.g. the assumption that *teenage pregnancy is a problem at all*).

Preparation for role-playing exercise. After 30 minutes of class discussion, I inform students that by virtue of their group assignment, they have accepted a challenge to assume the role of a famous person whose theory we will compare with our own ideas about teenage

pregnancy. When they turn over the number at their table, they discover that their group has been assigned one of the following theorists: Freud, Erikson, Piaget, Skinner, Bandura, Bowlby, or Riegel.[1] Members at each table receive a copy of the prototypic response their theorist might have given to explain why a hypothetical teenage couple might find themselves in the predicament of an unexpected pregnancy. Each group has 25 minutes to read and discuss their theorist's response. They then prepare a summary of their hypothetical views about the young couple in particular, and extrapolate what they think are the general tenets of the theory. We hold a drawing to determine a spokesperson from each group, who then has a few more minutes to make sure they are ready to represent their group during a panel discussion. One unselected person from the class is asked to moderate the panel.

Panel discussion and debriefing. After a break, designated theorists take center stage, where the moderator introduces them and asks each one to share the highlights of his or her theory and then to apply their theory to the case study. I try to select a student who will feed the panelists questions, encourage them to interact with one another, and seek inquiries from the audience. I usually prep this person to give each theorist's "associates" in the audience a chance to add anything to the initial presentation. By the time this public forum ends, the class usually has questions regarding one theory or another, which we respond to during the remaining part of the class. It is also not uncommon for young adults to express frustration at the limits of particular theories. Without knowing it, they often express epistemological assumptions regarding the multiplistic nature of opinions, the impossibility of ever finding the truth, and so on. I also encourage this, since beliefs typical of various stages of reflective judgment become visible, causing a healthy tension in the room. In addition to exposing students to various developmental theories, I try to leave them with a sense that we all have "theories" of our own, that our theories probably share some elements with others, and that one of our purposes in the

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[1] Since no women were represented in these materials, a colleague of mine is working to create a prototypic response through the eyes of Carol Giligan and I am doing the same for Nel Noddings. Also, we have considered asking one of our multicultural colleagues to help us draft a general response to this issue as well; for example, is there something about Native American culture that might help explain the incidence of teenage pregnancy among American Indians?

class is to examine different ideas and martial arguments that will help us make meaning in our roles as middle and secondary school teachers. The class ends with these large questions still on the table.

Follow-up. As a homework assignment, students are assigned a more detailed case study to read ("Troubled Amy," Greenwood and Parkay, 1989) in which a teenage girl approaches a young teacher, asks her to promise confidentiality, and then burdens the teacher with a request to help see her through an abortion. The case is used to demonstrate how theoretical awareness can help us better understand students in authentic situations. Students are prompted to reconsider how personal beliefs help shape our actions in the face of ill-structured problems. I often ask students to submit a brief statement of personal theory explaining the phenomenon of teenage pregnancy in general as well as their response to Amy's case in particular. This gives me a chance to make a formative assessment of what students took from the initial lesson. The case study itself is the subject of discussion a few days later when the class considers the topic of moral development. Throughout the unit, we refer to the topic of teenage pregnancy, and students have a chance to expound on their "personal theory" as one option on a reflective essay that culminates the unit. We also revisit the issue during subsequent units, or whenever questions arise that are relevant to the nature, function, and limitations of personal and psychological theories.

Activity Two:

Motivation Theory and Students' Learning Problems

I have used approaches similar to the one described above in conjunction with other units in the same course. For example, I designed an activity for the opening day of a unit on motivation with objectives that are similar to those listed in the previous section. Once again, the activity is designed to create a context within which concepts introduced throughout the unit may be embedded and discussed.

Materials

As in the first activity, students receive a handout as they enter class (Appendix C), including a description of the lesson for the day along with a number indicating group assignment. Before the actual lesson begins, each student is asked to write a succinct definition of the word *motivation*. This is followed by a variation on a K-W-L strategy (Carr & Ogle, 1987) in which each student is then given an opportunity to share something that they KNOW or something they WOULD like to LEARN about motivation during the unit.

Procedures

First encounter with student profile. After this brief introduction, each group receives one of five motivational case studies. Taken from a book by Stipek (1993), these case studies profile five prototypic students in school situations, each of whom embodies a different set of concepts relevant to motivational theory. The names of the profiled students are *Defensive Dick* (a case study that reveals the effect of student attributions for success and failure, including the notion of learning and performance goals), *Safe Sally* (issues of optimal challenge, risk-taking, and failure tolerance), *Satisfied Sam* (intrinsic and extrinsic motivation), *Hopeless Hannah* (learned helplessness), and *Anxious Amy* (test anxiety). A sample of one of Stipek's profiles is included in Appendix D. Group members review the circumstances pertaining to their assigned student and decide on a preliminary answer to the following questions:

1. Does this sound like a motivation problem? Why or why not?
2. Consider your answer and explanation to question #1. Whether YES or NO, your answer probably reveals something about your personal definition of motivation. Look back at your initial definition and modify it based on your thinking about this student profile.

Preparation for I.E.P. After devoting 15 minutes to discussion of the profile, students are instructed to proceed with phase two. During this phase, students assign hypothetical roles consisting of individuals with a stake in the "success" of the student. These may include a principal, parent(s), regular classroom teacher, school psychologist or "special educator" (gifted/talented or learning disabled), and, finally, the student her- or himself. The group

prepares to hold an Individual Education Plan meeting (the nature and function of an I.E.P. is defined for the class), with the following goals in mind: (a) to identify and consider how multiple perspectives may impact the discussion; (b) to determine the best explanation for this student's behavior or alleged "problem"; (c) to discuss alternative solutions for dealing with the student and to formulate a set of recommendations from among those alternatives. Students are given just enough time to prepare their roles, but not enough time to script the ensuing meeting. I have found that 15 minutes allows students to prepare adequately without stifling the spontaneity and creativity that makes the meetings more authentic. Students take a short break before the I.E.P. meetings begin.

Conducting and debriefing the meetings. During the break, the room is arranged in the style of a "theater-in-the-round." That is, one table is placed in the middle with others surrounding it on the outside. Students are informed that only ONE meeting will be held at a time. These take place at the center table while the rest of us listen on the periphery. Each group has 10-15 minutes to conduct their meeting, after which I intervene and solicit input from the "audience" concerning their interpretations of what they heard. As indicated, the case studies were masterfully written to serve as prototypes of specific motivation concepts. Therefore, I keep detailed notes of which concepts come up during each follow-up discussion, even if the students don't use exact theoretical terms. In my experience, many key ideas emerge during these conversations, and, given the diverse nature of the case studies, numerous myths about what constitutes a potential motivation "problem" are challenged (e.g. Safe Sally profiles a popular high school girl who gets straight A's and participates in numerous extra-curricular activities; however, she also exhibits, albeit perhaps less visibly, an obsession with "performance goals" (Dweck, 1986) and an unwillingness to challenge herself for fear of failure). All groups take their turn "on stage" with whole class discussions following each vignette.

Follow-up. At the end of the class, students are given the following homework assignment (see Appendix C):

(a) skim the chapters in the text devoted to motivation and select at least three specific concepts or principles that are relevant to the student;

(b) describe HOW each concept is relevant;

(c) suggest an action plan based on the concept.

By following up in this way, the introductory role-playing situation also serves as an advance organizer for student readings and the content of the unit. Students regroup during the next session, compare what they found, and synthesize their findings in a graphic poster display which they then share with the rest of the class. I only intervene to correct possible misunderstandings of something they read or to raise questions relevant to potential misconceptions (as I see them) about the profiles themselves. I am careful to avoid intervening with "the right answer" during these presentations, preferring to allow students to interact with one another over their findings and recommendations. In a subsequent class, I revisit each case study one more time to "fill in" the gaps with relevant concepts and principles that they may have overlooked (or ones not covered in the text). This is accomplished by telling the class that I did the same homework assignment as they did, for all five students, and that I would like them to compare their conclusions with my own (their posters are still hanging in the room). I also ask them to critique my interpretations of the students' "problems" and to suggest additional implications and recommendations.

Discussion

After two decades of research, psychologists are finally beginning to translate theoretical claims about adult intellectual development into practical recommendations for college teaching. For example, King and Kitchener (1994) conclude their book Developing Reflective Judgment with a chapter devoted to "fostering reflective judgment in the college years" (pp. 222-257). In their final chapter, they offer 11 "observations and suggestions," including lists of sample developmental assignments. Although relevant and important, these suggestions are broad and general, leaving practitioners with the task of applying them to specific situations and domains. For example, to foster stage 5 reasoning, the authors suggest that students "compare and contrast

... competing points of view," citing evidence and "determining which proponent makes the better interpretation" of it (pg. 253), whereas for stage 6 reasoning, teachers are encouraged to have students "develop and defend firm arguments for a particular point of view" (pg. 254). To support these instructional goals, King and Kitchener offer similarly abstract recommendations. For example, professors should support stage 5 reasoning by "legitimizing students' struggle to adjudicate between competing interpretations and perspectives, both cognitively and affectively" (pg. 253); or, for stage 6, by "emphasizing the importance of developing and defending arguments about ill-structured problems, as well as the difficulty in doing so" (pg. 254).

Although most college professors would agree that these are noble suggestions, and ones they implement to a greater or lesser degree, research suggests that the most typical method for presenting "conflicting points of view" is to offer them during a lecture, with discussion of them reserved for "upper division courses" (Scheurman, in press). Seldom is time provided in entry-level courses for students to struggle with the nuances of argument, to interpret claims in light of perspectives, or to wrestle their way to a justifiable endorsement of a claim about some issue. I often hear reports of frustration from students who learn about constructivist learning theory but then have to endure professors who employ teaching techniques that are inconsistent with the most rudimentary principles of constructivism. Throughout their general education, these students are often lectured at by authorities and then asked to regurgitate discrete tidbits of knowledge that comprise the content of a particular course. Unfortunately, this practice even pervades professional education courses, leaving pre-service teachers with few role models for constructivist teaching practices during their formative college years.

The activities presented in this paper provide examples of ways to break this pervasive non-constructivist approach to college level teaching. By asking students to place themselves in simulated authentic contexts and then to reflect on and discuss those contexts throughout a unit of study, these activities are consistent with many of King and Kitchener's specific suggestions for fostering reflective judgment. For example, by introducing the active, interactive nature of the course right from the onset, and by affirming the value of individual opinions on

controversial issues such as teenage pregnancy, students gain respect as people and a feeling of self-efficacy regardless of the epistemic assumptions they exhibit (pg. 231). Furthermore, since students can identify personally with the issues (nearly all of my students have been close to a situation involving a teenage pregnancy and it is rare that I find a student who cannot identify intimately with one or more of the profiles in motivation), it also signals to students my recognition that the challenges they will face and the support I will give them in the course are grounded emotionally as well as cognitively (pg. 246).

By choosing to couch these two units of study in terms of a search for meaningful interpretations of complex situations rather than as a mere presentation of oversimplified facts and principles, these activities are consistent with three other suggestions for fostering reflective judgment. First, students gain first-hand familiarity with ill-structured problems within the domain of educational psychology (pg. 233ff). Second, the activities "create multiple opportunities for students to examine different points of view on a topic reflectively" (pg. 237). Indeed, the strength of these exercises is that students must assume different perspectives in public. These perspectives are sometimes based on existing theory so that students can "try on" new ideas under the auspices of hiding behind someone else's ideas. Other times they are based on their own or their colleagues' personal beliefs, causing them to experience the dissonance of disagreement. Either way, a third benefit of the activities is that they such perspective-taking "creates opportunities and provides encouragement for students to make judgments and to explain what they believe" (pg. 238ff), especially since students revisit the same situation in order to revise their judgments as new evidence becomes available throughout the unit.

Since our exploration of these topics is active, interactive, and public, we are able to accomplish several other suggestions made by King and Kitchener. First, these activities enable me to "informally assess students' assumptions about knowledge and how beliefs should be justified" (pg. 240ff). In addition to influencing the kind of summative assessments I use to monitor the progress of my students, this formative assessment has the added advantage of enhancing my own enjoyment in teaching. Socrates' imperative as a teacher was to "know

thyself," but when asked what he considered the proper subject of study, he claimed that a teacher should always "study thy students." By "acknowledging that students work within a developmental range of stages," (pg. 242), I can delight in the give and take among students of different ages and stages. I can also "target expectations and goals accordingly," reducing potential frustration when students make naive statements, as well as "provide both challenges and supports in interactions with students" (pg. 244ff).

Conclusion

The activities described in this paper were designed with several key principles of constructivist learning theory in mind. First, both activities were designed to elicit students' prior knowledge, conceptions, and questions about a particular unit of study through an open-ended inquiry. Second, each activity created a provocative, authentic context in which aspects of development and motivation could be further explored. Finally, the activities required students to adopt or at least consider multiple perspectives in arriving at a judgment about these relevant issues. These principles have been recognized by many experts as the core of a psychological perspective that should guide the preparation of K-12 teachers (see Anderson et al., in press; Black & Ammon, 1993). There is a growing consensus that the types of activities described here are especially effective for teaching domains such as science (Driver et al., 1994; Carey & Smith, 1993; Roth, 1993), math (Cobb, 1994; Schoenfeld, 1991), and history (Wineburg, 1991), to pre-college level students. Are techniques such as these appropriate for adults? My involvement in research and faculty development activities with middle, secondary, and post-secondary teachers suggests that they are. I recently used the motivation activity described in this paper during a full day workshop with teachers and administrators, and the wealth of practical, procedural, and declarative knowledge that was brought to each case study made for a dynamic discovery of numerous motivational principles. Afterwards, participants were able to identify elements of the lesson that were consistent with the constructivist principles listed above.

A colleague of mine with whom I teach a professional education course in the techniques of secondary teaching recently informed me that while all of these "constructivist" techniques

may have their place in middle and high school, he believed teachers had a more important moral obligation to "prepare students for the way it's going to be in college." It was immediately evident what his meaning was: pre-college students must be lectured at and made to take notes while one person in the room talks, since this is the way college is. I do not disagree that we have a responsibility to prepare high school students for college, and although I am not opposed to the lecture as a viable teaching strategy[2], I do not believe that ineffective instruction at the college level justifies us to provide ineffective instruction before college. In the same vein, historically ineffective teaching at the college level also does not justify that we perpetuate the cycle in the future.

Those who study the intellectual development of young adults are waking up to the fact that methods consistent with constructivist learning principles are one of the best ways to promote reflective judgment in college, and they have begun to issue recommendations to that effect. Unfortunately, there has been a lack of clearly defined examples demonstrating how these principles and recommendations translate into actual lessons in the college classroom. Although the activities presented here address this need, the discussion was limited in two ways. First, in spite of their intuitive, practical, and theoretical appeal, research is still limited as to the impact of such activities on the long term dispositions of students. Second, there is still much work to be done to document the degree to which these constructivist strategies influence students' performance on traditional measures of student achievement. Although I am engaged in a program of research to investigate these questions, there is already sufficient evidence to suggest that activities such as those presented here deserve serious consideration as exemplary ways to approach general undergraduate education. In the area of pre-service teacher education, where success is measured by the ability of students to translate their knowledge into effective teaching

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2 Even for this technique, there are constructivist strategies for augmenting a lecture that make it more active and interactive in nature. For an example of one such technique in the domain of history, see the description for "interactive slide lectures" developed by the Teacher's Curriculum Institute (1994).

strategies, it is even more important that students experience active learning situations like those we hope they will create for their future students.

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Table 1. Summary of stages from the Reflective Judgment Model (extrapolated from King & Kitchener, 1994; pp. 14-16) with corresponding reference to "constructivist" view of the meaning-making process.

Stage	Knowledge is viewed as:	Beliefs are justified by:	Relationship to Constructivist View -- Meaning:
1	Absolute and certain	Beliefs reflect reality directly; no need to justify them	Comes from direct observation
2	Certain but not immediately available	Information from authority	Comes from observing or receiving information
3	Sometimes certain but often temporarily uncertain	Future information from authorities or what feels right at the moment	May not be available now but depends on personal biases until truth is obtained
4	Uncertain and ambiguous	Personal or situational variables (e.g. lost data)	Is idiosyncratic and relative; my meaning (truth, opinion) is as good as yours
5	Contextual and interpretable	Rules of inquiry within a particular context	Is subjective but defensible within a perspective
6	Interpreted across contexts	Comparing evidence and evaluating opinions across perspectives	Is constructed on the basis of criteria such as weight of evidence, utility, or pragmatic need for action
7	Tentatively certain and based on reasonable inquiry	Evaluating, re-evaluating, and integrating, if need be, evidence and arguments from multiple perspectives	Is constructed using criteria such as probability, risk, consequences, or inter-relationships among factors

APPENDIX A

Educational Psychology - scheurman
Coming to terms with DEVELOPMENT

Today in Educational Psychology, you will be involved in a role-playing exercise. Please prepare to involve yourself in the following steps.

1. Before class begins, think (on your own) about the overall issue of teenage pregnancy. List several reasons, as quickly as you can, why you think this has become a major "issue" or "problem" in our society? After you list a few reasons, see if you can summarize you thoughts into a personal "theory" that might explain the phenomenon of teenage pregnancy.

   1.

   2.

   3.

   General explanation, or "theory":

2. Next, share your theory with other students at your table. Compare and contrast theories. What are some common themes? On what points did you disagree?

   Agreements: Disagreements:

3. Now you will be assigned a famous "theorist" who might have offered an explanation for the phenomenon of teenage pregnancy. As a group, read this person's explanation and discuss it. Prepare a member of your group (TBA) to assume the role of this person. As part of a panel discussion, this person will need to (a) summarize the basic tenets/assumptions of their theory; (b) explain to the audience how their theory explains the behavior of teenage sexuality; and (c) be prepared to answer questions on the matter.

   To assist you in summarizing this person's theory, you might keep in mind that every theory rests on certain "assumptions" (about human nature, about what counts as reality, about how we discover the truth of a matter) and certain tenets (principles of human behavior, propositions, "facts"). If you are having trouble with this, you might see if you can fill in some of the blanks below, given what you know of this theory.

   - If _____ , then _____ .
   - When _____ , people will _____ .
   - _____ causes _____ (effects).
   - People are more likely to _____ than they are (or when) _____ .
   - A fundamental characteristic of human nature is _____ .
   - Individual behavior depends on _____ .
   - Abnormal (anti-social? immoral? unintelligent?) behavior stems from _____ .

   ON THE BACK OF THIS PAGE, WRITE DOWN AT LEAST THREE BASIC TENETS/ASSUMPTIONS OF YOUR THEORY, AND DRAFT SOME NOTES THAT SUMMARIZE HOW THE THEORY EXPLAINS THE PHENOMENON OF TEENAGE PREGNANCY.

Appendix B

Example of developmental theorist's response to issue of teenage pregnancy. This and five other prototypes were borrowed from Sigelman & Shaffer (1991), Chapter 2 (pp. 31-66), *Theories of Human Development*.

Box 2.2
Psychoanalytic Theory Applied: Freud on Teenage Pregnancy

I welcome this opportunity to return to life to comment on the problem of teenage pregnancy. As you know, I was always fascinated by sex. This matter of teenage pregnancy is right up my alley! We must realize that teenagers experience intense conflicts during the genital stage of psychosexual development. Their new sexual urges are anxiety provoking and must somehow be managed. Moreover, the sexual conflicts of earlier psychosexual stages often reemerge during adolescence. Of course, I would need to find out more about the early childhood experiences and psychic conflicts of Sheila and James to pinpoint the specific causes of their behavior, but I can offer a few suggestions.

Since I've been back I have uncovered some revealing psychoanalytic studies of pregnant teenagers. In one study of 30 teenage girls,[1] many of them were found to be very dependent individuals who had weak egos and superegos. Perhaps Sheila and James did not have strong enough egos and superegos to keep their selfish ids in check; perhaps they sought immediate gratification of their sexual urges with no thought for future consequences or morality.

But it is also quite possible that these teenagers were motivated by inner conflicts that had their roots in infancy or the preschool years. For instance, many pregnant girls come from homes without fathers.[1] Perhaps Sheila never fully resolved the Electra complex of the phallic stage and was unconsciously seeking to possess her father by possessing James and having a baby. James, of course, might have been seeking to gratify his unconscious desire for his mother through Sheila. Teenagers often seem to distance themselves from their parents as a defense against reawakened Oedipal feelings of love for the opposite-sex parent.

All these possibilities suggest that Sheila and James may have had an especially difficult time dealing with their new-found sexuality. I'll bet my reputation that one or both of them has personality problems rooted in early childhood experiences. Without being consciously aware of what is motivating them, they may well be seeking to gratify needs that were never adequately met in their early years.

[1]For further information about the works "Dr Freud" refers to, see Babikian & Goldman (1968), Hatcher (1973), and Schaffer & Pine (1973).

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APPENDIX C

MOTIVATION
Case Study Role Play

We will begin class today with a discussion of what you "know" and what you "want to know" about the topic of motivation. To help us get started, define the word **motivation**.

You will notice that your group has been assigned a student case study. After our initial discussion, your group's task is to review the circumstances pertaining to this student's situation in school, and then decide on an answer to the following questions:

1. **Does this sound like a motivation problem to you? Why or why not?**
2. **Consider your answer and explanation to question #1. Whether YES or NO, your answer probably reveals something about your personal definition of motivation. Look back at your initial definition and modify it based on your thinking about this student profile.**

Next, imagine that you are members of a group of concerned individuals holding an I.E.P. (Individual Education Plan) meeting with this student as the subject. Assign group members one of the roles listed below, and conduct the meeting with the following goals in mind: (a) to determine the best explanation for this student's "problem" (assuming you decide she has one); (b) to discuss alternatives for dealing with the problem (from various perspectives); and (c) to form the nucleus of a set of recommendations for dealing with the student.

- **A principal to direct the meeting;**
- **At least one parent of the student;**
- **At least one regular classroom teacher;**
- **At least one school psychologist or other "specialist;"**
- **The student her- or himself.**

Following the role-play, your homework assignment is to read through the chapters on motivation in your text until you find at least THREE specific ideas, concepts, or specific strategies that you think address this student's situation in a relevant way. Come to class prepared to discuss what the concept or strategy is, how it relates to the student, and how it might translate into an actual plan for dealing with the situation. List the page number of all concepts or strategies you choose so we can refer to them later.

Concept or strategy	Relation to student	Action Plan
A.		
B.		
C.		

Appendix D

Example of student motivational profile. This and four other profiles were borrowed from Stipek (1993), Chapter 1 (pp. 1-8), *Profiles of Motivational Problems*.

DEFENSIVE DICK

Dick is one of the worst students in his fourth-grade class. Poor performance, as far as Dick is concerned, is inevitable. So he puts his energy into preventing anyone from interpreting his poor performance as evidence of a lack of ability. Unfortunately, the kind of strategies he uses to avoid looking dumb do not lead to improved performance.

His strategies are clever and often missed by the teacher, who does not have time to monitor him closely. For example, one morning Dick is working on an assignment to answer ten questions about a story the children were supposed to have read. The teacher shifts her attention from one child to another, monitoring each student's work to the best of her ability while answering questions. Dick asks the teacher several questions, but he is careful to give her the impression that he is working diligently to answer most of the questions on his own. Actually, he receives the rest of the answers by asking classmates or by copying his neighbor's paper. Thus, Dick manages to complete the assignment without reading or understanding the story.

That afternoon the teacher asks students to take out yesterday's assignment, which required the use of a dictionary. Dick makes a show of looking through his desk for an assignment that he knows, his teacher knows, and his classmates probably know, he has not done.

During a social studies test Dick sharpens his pencil twice, picks up his eraser that falls to the floor, and ties his shoelaces. He makes no attempt to conceal his lack of attention to the questions. To the contrary, he seems eager for everyone to notice that he is not trying. The teacher publicly reminds him several times to get to work, giving Dick and his classmates the message that if he tried, his performance, which will otherwise inevitably be poor, might be better. This, of course, is exactly the interpretation Dick desires.

Dick's strategies serve their purpose at least in the short run. He manages to complete some assignments with a respectable, if not an excellent, level of performance. By fooling around while he is supposed to be taking tests (when other strategies, such as cheating, are not available), he at least avoids appearing dumb, the logical conclusion associated with poor performance and high effort. By not trying, he creates an alternative explanation for failure, leaving open the question of whether he would have done well on the test if he had tried.

The tragedy is that Dick's ingenious efforts to avoid looking dumb are self-defeating. He makes little progress in mastering the curriculum, and failure becomes increasingly inevitable. Eventually Dick will give up trying to preserve an image of himself as a capable person, and he will resign himself to the status of one of the "dumb" kids in the class. If he continues this self-destructive game, he will soon look like Hopeless Hannah, who does not even try to look smart.